DOCUMENT NUMBER: 37-26-0538-85

DOCUMENT TITLE: Analyses o f Soils from Three Fire Training Pits, USAEHA Project

DATE: 17 September 1984

PROGRAM: 37

DEPARTMENT OF THE ARMY Mr. Rosak/kb/AUTOVON
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY 584-3651
ABERDEEN PROVING GROUND, MARYLAND 21010

REPLY TO ATTENTION OF
HSHB-ES-H

6 DEC 1984

SUBJECT: Analyses of Soils from Three Fire Training Pits, USAEHA Project No. 37-26-0538-85

Commander
USA Training and Doctrine Command
ATTN: ATMD
Fort Monroe, VA 23651

1. Reference:

a. FONECON between Mr. Raphael Nicholas, Fort Bliss, and Mr. David Rosak, this Agency, 17 September 1984, SAB.

b. Letter, ATZC-DEH-E, Fort Bliss, 22 October 1984, subject: Request for Testing of Soil H/W Characteristic, with 1st Ind, HQ TRADOC, ATEN-FN, 31 October 1984.

c. FONECON between Mr. Raphael Nicholas, Fort Bliss, and Mr. David Rosak, this Agency, 27 November 1984, subject: Reporting Results from Fire Training Pit Samples.

2. As discussed in reference 1a, polychlorinated biphenyls (PCBs), extraction procedure (EP) toxicity metals, grease and oil, selected hydrocarbons including fuel oil, and analyses for halogenated organic solvents were performed on the soil samples. Flammability and reactivity analyses as listed in reference 1b were not performed. At this time, this Agency does not possess the capability for such testing.

3. In accordance with reference 1c, the analyses reports for PCBs, EP toxicity, grease and oil, selected hydrocarbons, fuel oil, and halogenated organic solvents are attached as inclosures. Residues from fire training site No. 1 are hazardous and include relatively high concentrations of methylene chloride, 1,1,1-trichloroethane, and trichloroethylene.

4. The fuel oil content, as analyzed by gas chromatography (GC), is either diesel fuel or No. 2 fuel oil and was detected in high concentrations in fire training sites No. 1 and No. 2. Because diesel fuel and No. 2 fuel oil have similar GC responses, a definite distinction between the two could not be made. The fuel residual range, as detected by a GC/mass spectrometry purge extraction technique, is a qualitative measurement which does not detect high molecular weight hydrocarbons. As

expected, these ranges are lower than the GC values, but they are included because they help to verify the GC values. The grease and oil analysis was done by a Soxhlet freon extraction procedure and does not measure all the fractions that may be present in diesel fuel and/or No. 2 fuel oil.

5. No EP toxicity metals, xylene nor PCBs were detected in any of the samples. Low concentration ranges for substituted naphthalenes and trace concentrations for some halogenated purgeable organics were detected but are not significant to be of an environmental danger.

6. Laboratory quality control procedures, in accordance with approved US Environmental Protection Agency guidelines, were conducted with these samples. Upon request, the quality control data can be made available.

7. Point of contact for further questions is Mr. David Rosak or Chief, Hazardous Waste Branch, Waste Disposal Engineering Division, this Agency, AUTOVON 584-3651.

FOR THE COMMANDER:

ORIGINAL SIGNED

KARL J. DAUBEL
Colonel, MS
Director, Environmental Quality

6 Incl
as

CF:
Cdr, TRADOC (ATEN-FN)
HQDA (DAEN-ZCF-U)
HQDA (DAEN-ZCE)
HQDA (DASG-PSP)
Cdr, HSC (HSCL-P)
Comdt, AHS (HSHA-IPM)
Cdr, WBAMC (PVNTMED Svc) (2 cy)
Cdr, Fort Bliss (ATZC-DEH-E)
C, USAEHA-Rgn Div West

Gas Chromatography REPORT OF ANALYSES PCBs

The proponent of this form is HSE-LE.

INSTALLATION/RETURN ADDRESS	PROJECT NUMBER	DATE SAMPLES RECT
Fort Bliss	37-26-0538-84	17 Oct 84
	PROJECT OFFICER: Rosak	

TYPE OF SAMPLE: Soil

SAMPLE NUMBER	SAMPLE RESULTS (PARAMETER AND UNITS)		
FIRE TRAINING SITE			
#1	<1.0	ppm	PCB
#2	"	"	"
#3	"	"	"

PROCEDURES PERFORMED: PCBs scanned for: Arochlors 1016, 1242, 1248, 1254, & 1260
ppm = parts per million

ANALYST(s) (initial)	REVIEWED BY (initial)	DATE RESULTS REPORTED
John F. Sigmond	RCB	22 Oct 84

AERA Form 14, 1 Jun 81

INCL 1

RUN DATE: 11/16/84

EP Toxicity Metal Results

USAEHA — RADIOLOGICAL AND INORGANIC CHEMISTRY DIVISION — METALS ANALYSIS BRANCH

PROJ. OFFICER: ROSAK

PROJECT#: 37-0538

INSTALLATION: FT BLISS

REVIEWED BY: Peter Franc

in ug/L

	TYPE	FIELD#	AG	AS	BA	CD	CR	HG	PB	SE
Fire Training Site 8	SOIL	0538-1	<500	<500	<10000	<100	<500	<20	<500	<100
"	SOIL	0538-2	<500	<500	<10000	<100	<500	<20	<500	<100
"	SOIL	0538-3	<500	<500	<10000	<100	<500	<20	<500	<100
RCRA	REGULATORY THRESHOLD IN ug/L		5000	5000	100000	1000	5000	200	5000	1000

2

INCL 2

RUN DATE: 20NOV84

Grease & Oil Results

RADIOLOGICAL AND INORGANIC CHEMISTRY DIVISION — NON-METALS ANALYSIS BRANCH

Proj. Officer: Posak — Division: WDED

Installation: Ft. Bliss — Timekeeping #: 37-28-0538 — Proj. Chemist: Ryan

Sample Description: Soils

Remarks: Method : Soxhlet Freon Extraction

Date Received: 11OCT84 — Date Reviewed: 20NOV84 — Reviewed by: MAR

SPL ID.	G40 mg/Kg
FIRE TRAINING SITE	
1	81.
2	50
3	52.

Roger E. Ryan

ROGER E. RYAN, PH.D.
CHIEF, NON-METAL ANALYSIS BRANCH, RADIOLOGICAL & INORGANIC CHEMISTRY DIVISION

3

INCL 3

Selected Hydrocarbon Results

GC/MS Analysis / Purge Extraction Technique

Fort Bliss Soils — Estimated Concentration Range (mg/g)

Sample Number Fire Training Site	1		2		3		
Compound							
Xylene	NF		NF		NF		
Fuel residual	20 → 40		15 → 35		NF		
petroleum ether residual	NF		NF		NF		
Substituted Naphthalenes	10 → 20		15 → 25		TR		

COMMENTS:

NF - NOT FOUND

TR - TRACE DETECTED BUT NOT QUANTITATIVE

ANALYST [signature]

DATE RJV

REVIEWED 14 Nov 1984

4 INCL 4

2 [illegible] 1984

Gas Chromatography REPORT OF ANALYSES - Diesel Fuel or No. 2 Fuel Oil

The proponent of this form is HSHB-LO

RETURN ADDRESS	PROJECT NUMBER	DATE SAMPLES REC'D
WDEQ	37-27-0538	16 OCT 84
	PROJECT OFFICER: D. ROSAK	

SAMPLED INSTALLATION: Ft Bliss Soils

LAB NUMBER	SAMPLE NUMBER	SAMPLE RESULTS (PARAMETER AND UNITS)
		Diesel Fuel or No2 Fuel Oil mg/gm
	Fire Training Site 1	1.5
	" 2	3.6
	" 3	0.1

PROCEDURES PERFORMED

ANALYST(s) (initial)	REVIEWED BY (initial)	DATE RESULTS REPORTED
TAA	AEHA REVIEW F. BELKIN, C. FB [illegible]	1 NOV 84

AEHA Form 14, 1 Sep 82

5 INCL 5

US ARMY ENVIRONMENTAL HYGIENE AGENCY

ORGANIC ENVIRONMENTAL CHEMISTRY DIVISION

MASS SPECTROMETRY LABORATORY

PURGEABLE ORGANICS ANALYSIS REPORT

SAMPLE Ft. Bliss Soils DATE SAMPLING: ANALYSIS: 2-5 NOV 84 MS FILE VARIOUS

COMPOUND	FIRE TRAINING SITE 1	2	3
	µg/g of soil		
BENZENE	TR*	<1	<1
BROMOMETHANE	<1	<1	<1
BROMODICHLOROMETHANE	<1	<1	<1
BROMOFORM	<1	<1	<1
CARBON TETRACHLORIDE	<1	<1	<1
CHLOROBENZENE	TR	<1	<1
CHLOROETHANE	<1	<1	<1
2-CHLOROETHYLVINYL ETHER	<1	<1	<1
CHLOROFORM	<1	<1	<1
CHLOROMETHANE	<1	<1	<1
DIBROMOCHLOROMETHANE	<1	<1	<1
1,1-DICHLOROETHANE	<1	<1	<1
1,2-DICHLOROETHANE	<1	<1	<1
1,1-DICHLOROETHENE	9	<1	<1
1,2-DICHLOROETHENE (TRANS)	4	<1	<1
1,2-DICHLOROPROPANE	<1	<1	<1
1,3-DICHLOROPPOPENE (CIS)	<1	<1	<1
1,3-DICHLOROPROPENE (TRANS)	<1	<1	<1
ETHYL BENZENE	TR	<1	<1
METHYLENE CHLORIDE	25	4	TR
1,1,2,2-TETRACHLOROETHANE	<1	<1	<1
TETRACHLOROETHYLENE	69	<1	<1
1,1,1-TRICHLOROETHANE	<1	<1	<1
1,1,2-TRICHLORCETHANE	153	<1	<1
TRICHLOROETHYLENE	<1	<1	<1
TRICHLOROFLUOROMETHANE	— **	—	—
TOLUENE	<1	<1	<1
VINYL CHLORIDE	Yes	Yes	Yes
OTHER COMPOUNDS:			

** - Toluene present in blank for procedure employed.

* TR - TRACE AMOUNT BUT NOT QUANTITATIVE

Analyst [signature]

Reviewed [signature]

*INCL 6